

WHAT IS CLAIMED IS:

1. A process for producing polyurethane(urea) encapsulated, slow release fertilizer particles comprising:
 - a) applying a polyisocyanate component to fertilizer particles to form
 - 5 isocyanate coated fertilizer particles,
 - b) mixing an inert filler with said isocyanate coated fertilizer,
 - c) adding an isocyanate-reactive component to the mixture of step b) and
 - 10 d) allowing the reactive components to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 percent by weight of filled polyurethane(urea), said percent by weight based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about
 - 15 80:20 to about 30:70.
2. The process of Claim 1 wherein steps a), b), c) and d) are repeated (successively) as many times as necessary, with the polyurethane(urea) encapsulated fertilizer particles from the previous step d) being
- 20 substituted for the fertilizer particles in step a), so as to form polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 % by weight of filled polyurethane(urea) based on the total weight of the encapsulated fertilizer.
- 25 3. The process of Claim 1, wherein said filler containing polyurethane(urea) encapsulated fertilizer particles contain from about 4 to about 12% by weight of filled polyurethane(urea).
4. The process of Claim 1, wherein said ratio is from about 80:30 to
- 30 about 30:70.

5. The process of Claim 4, wherein said ratio is from about 60:40 to about 40:60.
6. The process of Claim 1, wherein said filler is an inert, inorganic material which is insoluble or substantially insoluble in water and which contains at least 50% by weight of particles having a particle size of less than 100 microns.
7. A process for producing polyurethane(urea) encapsulated, slow release fertilizer particles comprising:
- a) applying a polyisocyanate component to fertilizer particles to form coated fertilizer particles,
 - b) adding an isocyanate-reactive component to said coated fertilizer particles,
 - 15 c) mixing an inert inorganic filler with the mixture of step b) before the isocyanate and isocyanate-reactive component react and
 - d) allowing the reactive components to react to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 percent by weight of filled polyurethane(urea), said percent
 - 20 by weight based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to about 30:70.
8. The process of Claim 7 wherein steps a), b), c) and d) are repeated (successively) as many times as necessary, with the polyurethane(urea) encapsulated fertilizer particles from the previous step d) being substituted for the fertilizer particles in step a), so as to form polyurethane(urea) encapsulated fertilizer particles containing from about

1 to about 15 % by weight of filled polyurethane(urea) based on the total weight of the encapsulated fertilizer.

9. The process of Claim 7, wherein said filler containing
5 polyurethane(urea) encapsulated fertilizer particles contain from about 4 to about 12% by weight of filled polyurethane(urea).
10. The process of Claim 7, wherein said ratio is from about 80:30 to about 30:70.
- 10 11. The process of Claim 10, wherein said ratio is from about 60:40 to about 40:60.
12. The process of Claim 7, wherein said filler is an inert, inorganic
15 material which is insoluble or substantially insoluble in water and which contains at least 50% by weight of particles having a particle size of less than 100 microns.
13. A process for producing polyurethane(urea) encapsulated, slow
20 release fertilizer particles comprising:
a) mixing fertilizer particles with an inert inorganic filler,
b) applying a polyisocyanate component to the mixture to form a mixture of coated fertilizer particles and coated inert filler,
c) adding an isocyanate-reactive component to the resultant mixture
25 and
d) allowing the reactive components to react to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 percent by weight of filled polyurethane(urea), said percent by weight based on the total weight of the encapsulated fertilizer, with the

proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to about 30:70.

14. The process of Claim 13 wherein steps a), b), c) and d) are
5 repeated (successively) as many times as necessary, with the
polyurethane(urea) encapsulated fertilizer particles from the previous step
d) being substituted for the fertilizer particles in step a), so as to form
polyurethane(urea) encapsulated fertilizer particles containing from about
1 to about 15 % by weight of filled polyurethane(urea) based on the total
10 weight of the encapsulated fertilizer.

15. The process of Claim 13, wherein said filler containing
polyurethane(urea) encapsulated fertilizer particles contain from about 4
to about 12% by weight of filled polyurethane(urea).

16. The process of Claim 13, wherein said ratio is from about 80:30 to
about 30:70.

17. The process of Claim 16, wherein said ratio is from about 60:40 to
20 about 40:60.

18. The process of Claim 13, wherein said filler is an inert, inorganic
material which is insoluble or substantially insoluble in water and which
contains at least 50% by weight of particles having a particle size of less
25 than 100 microns.

19. A process for producing polyurethane(urea) encapsulated, slow
release fertilizer particles comprising:
a) applying an isocyanate reactive component to fertilizer particles to
30 form coated fertilizer particles,

- b) mixing an inert inorganic filler with said coated fertilizer particles,
 - c) adding a polyisocyanate component to the mixture of step b) and
 - d) allowing the reactive components to react to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from
5 about 1 to about 15 percent by weight of filled polyurethane(urea),
said percent by weight based on the total weight of the
encapsulated fertilizer, with the proviso that the weight ratio of
polyurethane(urea) to filler is from about 80:20 to about 30:70.
20. The process of Claim 19 wherein steps a), b), c) and d) are
10 repeated (successively) as many times as necessary, with the
polyurethane(urea) encapsulated fertilizer particles from the previous step
d) being substituted for the fertilizer particles in step a), so as to form
polyurethane(urea) encapsulated fertilizer particles containing from about
1 to about 15 % by weight of filled polyurethane(urea) based on the total
15 weight of the encapsulated fertilizer.
21. The process of Claim 19, wherein said filler containing
polyurethane(urea) encapsulated fertilizer particles contain from about 4
to about 12% by weight of filled polyurethane(urea).
- 20 22. The process of Claim 19, wherein said ratio is from about 80:30 to
about 30:70.
23. The process of Claim 22, wherein said ratio is from about 60:40 to
25 about 40:60.
24. The process of Claim 19, wherein said filler is an inert, inorganic
material which is insoluble or substantially insoluble in water and which
contains at least 50% by weight of particles having a particle size of less
30 than 100 microns.

25. A process for producing polyurethane(urea) encapsulated, slow release fertilizer particles comprising:
- a) applying an isocyanate reactive component to fertilizer particles to form coated fertilizer particles,
 - 5 b) adding a polyisocyanate to said coated fertilizer,
 - c) mixing an inert inorganic filler with the mixture of step b) before the isocyanate and isocyanate-reactive component react and
 - 10 d) allowing the reactive components to react to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 percent by weight of filled polyurethane(urea), said percent by weight based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to about 30:70.
- 15 26. The process of Claim 25 wherein steps a), b), c) and d) are repeated (successively) as many times as necessary, with the polyurethane(urea) encapsulated fertilizer particles from the previous step d) being substituted for the fertilizer particles in step a), so as to form polyurethane(urea) encapsulated fertilizer particles containing from about
- 20 1 to about 15 % by weight of filled polyurethane(urea) based on the total weight of the encapsulated fertilizer.
27. The process of Claim 25, wherein said filler containing polyurethane(urea) encapsulated fertilizer particles contain from about 4
- 25 to about 12% by weight of filled polyurethane(urea).
28. The process of Claim 25, wherein said ratio is from about 80:30 to about 30:70.
29. The process of Claim 28, wherein said ratio is from about 60:40 to
- 30 about 40:60.

30. The process of Claim 25, wherein said filler is an inert, inorganic material which is insoluble or substantially insoluble in water and which contains at least 50% by weight of particles having a particle size of less than 100 microns.

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31. A process for producing polyurethane(urea) encapsulated, slow release fertilizer particles comprising:

- a) mixing fertilizer particles with an inert inorganic filler,
- b) applying an isocyanate reactive component to the mixture to form a
10 mixture of coated fertilizer particles and coated inert filler,
- c) adding a polyisocyanate component to the resultant mixture and
- d) allowing the reactive components to react to form filler containing
polyurethane(urea) encapsulated fertilizer particles containing from
about 1 to about 15 percent by weight of filled polyurethane(urea),
15 said percent by weight based on the total weight of the
encapsulated fertilizer, with the proviso that the weight ratio of
polyurethane(urea) to filler is from about 80:20 to about 30:70.

32. The process of Claim 31 wherein steps a), b), c) and d) are
20 repeated (successively) as many times as necessary, with the
polyurethane(urea) encapsulated fertilizer particles from the previous step
d) being substituted for the fertilizer particles in step a), so as to form
polyurethane(urea) encapsulated fertilizer particles containing from about
1 to about 15 % by weight of filled polyurethane(urea) based on the total
25 weight of the encapsulated fertilizer.

33. The process of Claim 31, wherein said filler containing
polyurethane(urea) encapsulated fertilizer particles contain from about 4
to about 12% by weight of filled polyurethane(urea).

34. The process of Claim 31, wherein said ratio is from about 80:30 to about 30:70.

35. The process of Claim 34, wherein said ratio is from about 60:40 to
5 about 40:60.

36. The process of Claim 31, wherein said filler is an inert, inorganic material which is insoluble or substantially insoluble in water and which contains at least 50% by weight of particles having a particle size of less
10 than 100 microns.